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COMMONWEALTH PHYTOPATHOLOGICAL NEWS

A QUARTERLY REVIEW OF NEWS AND VIEWS ISSUED BY THE COMMONWEALTH MYCOLOGICAL INSTITUTE, KEW, SURREY

GUMMING DISEASE OF SUGARCANE

A. C. Hayward
Commonwealth Mycological Institute

A tour, which I completed during October and November at the invitation of the Mauritius Sugar Industry Research Institute, was undertaken primarily to investigate reports of suspected strain variation in Xanthomonas vasculorum (Cobb) Dowson, causing gumming disease of sugarcane in Mauritius and Réunion (C.P. NEWS, 5: 28-29, 1959).

The Problem

The occurrence of strains of X. vasculorum in different territories, with a varying capacity for causing disease in different varieties of sugarcane, is a problem with important implications for sugarcane breeding programmes in Mauritius and elsewhere. However, the whole question of strain or race variation in species of the genus Xanthomonas is a problem of general interest to plant pathology, and one which had received little attention until the recent demonstration of race variation in X. malvacearum. on cotton (cf. Schnathorst et al., PL. DIS. REPTR. 44: 603, 1960). If different races of the gumming disease pathogen occur it is necessary to know how they are distributed and in what way they differ from one another. Work is in progress towards this end.

The situation may be summarised briefly as follows. In Mauritius, gumming disease has for years been controlled by the use of resistant cultivars, and occurs only in the variety collections on such old types as Louzier, Tanna, Iscambine, and D109.

In Madagascar, gummosis is widespread on the variety Louzier on the central plateau around the capital Tananarive, where sugarcane is grown solely for chewing purposes. The disease is not known to occur in areas of commercial cane in the east or in the north-west.

In Réunion, gummosis is widespread on the variety R397, especially in the dry, leeward part of the island, where exudation of gum from the ends of cut stalks,which is the most prominent symptom of systemic gummosis, was observed at two factories. Sixty per cent. of the acreage is planted to this one cultivar, which is not known to be susceptible in Mauritius.

In Natal, gummosis has been most severe on N:Co. 310 in the mist belt. The disease symptoms differ from those usually seen in Réunion and Mauritius, there being a high incidence of red striping due to infection by X. vasculorum.

An initial examination of the isolates from all sources has shown that there is a consistent cultural difference between the isolates from Madagascar and Natal on the one hand, and those from Réunion and Mauritius on the other. This is being investigated further at C.M.I.

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Other Bacterial Diseases

Of the other bacterial diseases of the sugarcane occurring in the Indian ocean area, only leaf scald is at present of economic importance; in Madagascar, on the east coast and in the north-west. The minor pathogens Xanthomonas rubrilineans (Lee et al.) Starr & Burkholder, causing red stripe, and Xanthomonas rubrisubalbicans (Christopher and Edgerton) Savulescu, causing mottled stripe of sugarcane, evidently occur in Mauritius, Madagascar, and Réunion. The diseases are chiefly of interest because the symptoms of each may be confused with those of gummosis and of leaf scald. For example, red stripe symptoms as a result of systemic infection with X. vasculorum have been confused with true red stripe disease: early mottled stripe may simulate leaf scald. In cases of doubt, isolation of the causative bacterium is essential for accurate diagnosis; there are striking cultural and other differences between X. vasculorum and X. albilineans and between these two pathogens and the bacteria causing red stripe and mottled stripe. Both of the latter organisms are white, or nearly white, in the mass on agar and have a number of other characteristics which clearly separate them from the genus Xanthomonas in which they are at present, erroneously, classified. This incorrect classification has resulted in some confusion among pathologists responsible for the diagnosis of diseases of sugarcane. For instance, the isolation of a yellow, monoflagellate rod from sugarcane leaves bearing red stripes has on occasion led to a diagnosis of red stripe disease instead of gummosis. Furthermore, preliminary systematic work indicates that the bacterium of mottled stripe disease is a pseudomonad, while the red stripe pathogen is morphologically intermediate between Pseudomonas and Vibrio.

Variety Resistance Trial

It would seem that problems of strain variation will be clarified only by setting up resistance trials in each territory using all the cultivars of sugarcane which are of mutual value. It is likely that in the near future such resistance trials will be set up in Mauritius, Madagascar, and Réunion, and the existing gumming resistance trial in Natal will be expanded to include varieties of importance in Mauritius and Réunion. Comparison of isolates from different territories is being carried out at C.M.I. and the writer is anxious to obtain freshly collected specimens of suspected bacterial diseases of sugarcane from other parts of the world for comparison with isolates from the Indian ocean area.

The work carried out so far would not have been possible without the generous hospitality and unstinted technical co-operation of the sugar industry in Mauritius, Réunion, and Madagascar, and of the South African Sugar Association. This help is warmly acknowledged. It is hoped that some of the problems of diagnosis and strain variation in bacterial pathogens of sugarcane will be solved by joint effort before the next triennial meeting of the International Society of Sugar Cane Technologists due to be held for the first time in Mauritius, in September, 1962.

(continued from p. 8)

S. Chowdhury was appointed additional director of agriculture, Assam, in September.

Awards

The Royal Society has presented the Darwin medal to E.J.H. Corner for his botanical researches, more especially those leading to his 'Durian theory' of evolution of tropical plants and his mycological work on the genus Clavaria.

British Mycological Society

Miss G.M. Waterhouse has been elected president for the year 1961. Mr. W. Buddin who has been treasurer for many years is retiring from office in July 1961 and will be succeeded by Dr. S.A. Hutchinson, Department of Botany, University of Glasgow. Mr. E.W. Mason has been elected an Honorary Member.

GREETINGS

At the recent Commonwealth Agricultural Bureaux Review Conference it was recommended that no official Christmas Cards be sent by Institutes and Bureaux, nevertheless

THE DIRECTOR and STAFF

of

C.M.I.

send best wishes for a happy and successful year to

ALL READERS

of

C.P.NEWS

C. M. I. DUPLICATES FOR SALE OR EXCHANGE

Please apply to the Director

1. Long Ashton Reports. 1903-10, 1907, 1909-32, 1934-43.

2. Proceedings of the Canadian Phytopathological Society. Nos. [1], 13, 15, 16, 18-22, 24-25. 1929-1957.

3. Annales des Épiphytes. 7, 9 (1-4), 10 (3, 5, 6), 11-13 (1-3, 5-6); 14-19. 1921-33. N.S. 11, (1-4) 1945; 7e année (1) 1956.

4. Transactions of the British Mycological Society. 10-11, 13-20 (1). 1925-35.

5. Phytopathology. 7 (3), 9 (2-12), 10, 11 (2-12), 12 (2), 13 (2), 21 (2), 23 (11), 32 (1-3), 33 (9), 34 (7), 36 (4), 37 (1-6, 8-12), 38 (3-12), 39 (1-4), 40 (11), 41 (11), 42 (2-9), 47 (7). 1917-57.

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The Agricultural Research Council of U.K. apportioned more than £4 million for research in 1958-9, which included the secondment of scientific staff for research projects in countries that have recently attained independence.

In October 1960, the Imperial College of Tropical Agriculture was merged with the University College of the West Indies. The name I.C.T.A. will, however, be retained.

British Schering have introduced an improved type of seed dressing machine to the U.K. market, which is claimed to eliminate all the disadvantages of the use of mercurial dusts on a large scale, with high efficiency in disease control. The essential process is the use of an atomized solution of a phenyl mercury compound, through which the seed passes in a closed chamber. The amount of liquid is adjusted so that no drying is necessary. The safety of the machine was illustrated by a demonstration in a room of a London hotel last summer. The whole process appears to be a continuous mechanical adaptation of Muskett's short-wet method described from Belfast in 1943.

The eighth International Congress of Microbiology will be held in Montreal, Canada, in 1962.

The Society for General Microbiology has arranged a two-day symposium on the 'Microbial Reaction to Environment' to be held on 10-11 April 1961 at the Royal Institution, London.

Publications of Interest

Complete sets of MYCOLOGIA (vols. 1-51, 1909-59) are now available from the Stechert-Hafner Service Agency Inc., 31 East 10th Street, New York 3, N.Y. price, cloth bound, $750 and unbound $589.50. Intermediate volumes at varying prices. Reprinted numbers at $5.00 each and original numbers, where available, at $2.50 each. Current subscriptions should be placed with the New York Botanical Garden, Bronx Park, New York 58.

NEW CHECK LIST OF BRITISH AGARICS AND BOLETI by R.W.G. Dennis, P.D. Orton and F.B. Hora (536 pp. Trans. Brit. mycol. Soc. Suppl. 1960, price 15s. or $2.50 + postage). A very useful tidying up of considerable use for those organizing forays and should be read in conjunction with P.D. Orton, part 3, and F.B. Hora, part 4, Trans. Brit. mycol. Soc. 43, pt.2, where the treatment given is expounded. A tasty morsel for heretics and bigots.

The BIBLIOGRAPHY OF SYSTEMATIC MYCOLOGY, published by C.M.I., will from the beginning of 1961 be issued twice a year instead of annually as in the past. The subscription price will be 10s. a year.

In the October 1960 issue of C.P. NEWS the HERB.I.M.I. HANDBOOK was advertised as priced 30s. This was an error. The price is 12s. 6d. [and we are told it is well worth it. Ed.]

BRITISH CUP FUNGI AND THEIR ALLIES by R. W.G. Dennis (pp. xxiv + 280, 40 col. pl., 20 fig., London, Roy. Soc. 1960, £4). Handsome, octavo volume. Most useful survey of majority of Ascomycete genera of British Isles.

IMPORTANT NOTICE TO READERS

At the recent Commonwealth Agricultural Bureaux Review Conference in London a recommendation was adopted that the COMMONWEALTH PHYTOPATHOLOGICAL NEWS should cease publication in its present form, but that the news items should be incorporated in the Review of Applied Mycology. In July last, however, the Commonwealth Mycological Conference endorsed the issue of C.P. NEWS, so that it is necessary to reconcile the two recommendations.

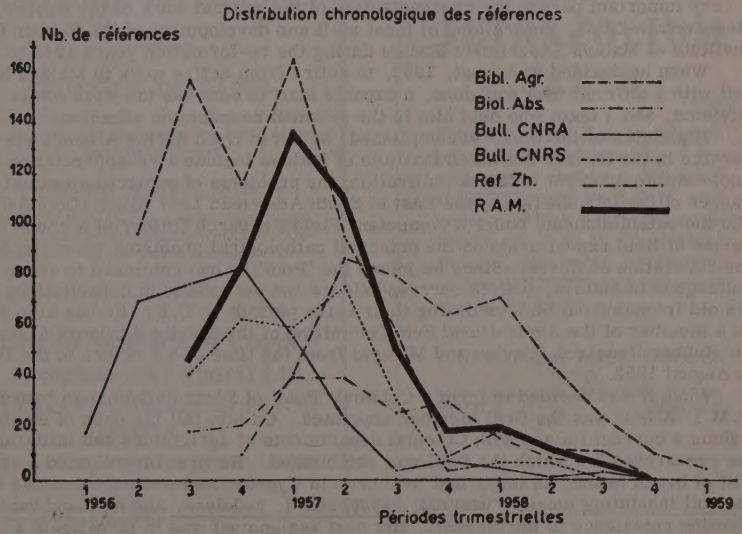
There appears to be no doubt that Commonwealth plant pathologists desire to receive some kind of news letter from the C.M.I. and the editor is faced with the difficulty of devising some kind of publication to cater for this demand. He would welcome suggestions from readers as to the sort of information required and how it should be presented. Early advice would be particularly welcome.

In the meantime will subscribers please note that C.P. NEWS will cease publication with the October issue and NO SUBSCRIPTIONS BEYOND THAT FOR THE 1961 VOLUME SHOULD BE SENT. All orders will be automatically cancelled after that date.

J.C.F.H.

VIRUS DISEASE ABSTRACTS

In order to obtain evidence on the efficiency of abstracting journals D. KERVEGANT and R. FOURMONT of the Centre National de Recherches Agronomiques, Versailles, analyse in the Bulletin des Bibliothèques de France, 1960, the numbers of papers on virus diseases of plants published in 1956 noticed by six journals and the distribution of the notices in time. The Bibliography of Agriculture, WHICH LISTS TITLES ONLY, noticed 739 items, the Review of Applied Mycology, 487, the Russian Referativnyi Zhurnal, 437, the Bulletin signalétique du C.N.R.A., 347, the Bulletin signalétique du C.N.R.S., 289, Biological Abstracts, 211, and the Bulletin de l'Institut Pasteur, 114. The chronological distribution of the publication of the notices are shown in the accompanying graph, reproduced in C.P. NEWS by kind permission of the authors.



R.A.Altson

Ralph Abbey Altson, "Bill" to his many friends, born in Kensington on 18th September, 1894, educated at Bedford School and the Imperial College of Science and Technology served with the Wessex Engineers during the first World War, from 1914 to 1919. He returned to Imperial College on demobilisation and on graduation was appointed Botanist and Mycologist in the Department of Agriculture, British Guiana, in 1922.

Whilst attending the first Imperial Agricultural Conference in London in 1927 Altson came in contact with Arnold Sharples, who was then Senior Mycologist in the Department of Agriculture of the Straits Settlements and Federated Malay States. Shortly afterwards Altson applied for, and obtained, a transfer to the post of Mycologist in Sharples' division in Malaya and after a period of study at Rothamsted he came to Kuala Lumpur in 1928. He served in the Department of Agriculture, Malaya, until December 1941, when, on the Japanese invasion of Malaya he obtained a commission in the Royal Air Force and served in the Malayan campaign. He was taken prisoner in Java in March, 1942, and returned to London in October, 1945, on release from a Prisoner of War camp in Indonesia.

During recuperation leave in England Bill met many of his Malayan colleagues, among them H.J. Page, Director of the Rubber Research Institute of Malaya. At that time Mr. Page was working in London on the rehabilitation of the Rubber Research Institute of Malaya, which had suffered severe losses in personnel as a result of the Japanese invasion and occupation. Both senior members of the staff of the Institute's Pathological Division, F. Beeley and R.P.N. Napper, had lost their lives during the war and Altson accepted the post of Head of the Pathological Division of the Rubber Research Institute of Malaya. Retiring from the Colonial Agricultural Service he returned to Malaya in August, 1946, and at once set to work to re-establish the Pathological Division of the Rubber Research Institute of Malaya, the post once held by his old friend and colleague Arnold Sharples. Needless to say, with his excellent background and experience of plant pathology in Malaya, Altson made a first class job of reorganisation of the research work, advisory services, and administration of the Institute's Pathological Division. The records of his work there will be found in the Annual Reports of the Rubber Research Institute of Malaya for the years 1946 to 1952 and in numerous papers relating to the pathology of Hevea brasiliensis published in the Institute's Journal and in other Journals.

Furthermore, as one of a small number of experienced officers who were available to the Board of the Rubber Research Institute of Malaya in 1946 he played a very important part in the reorganisation of the general work of the Rubber Research Institute, the training of local staff and development of the Rubber Research Institute of Malaya Experiment Station during the re-formation years 1946 to 1952.

When he decided in August, 1952, to retire from active work in Malaya he left with a difficult task well done, a capable staff to continue the work of his Division, and a team who held him in the greatest respect and affection.

Highlights of the work accomplished or set in train during Altson's six years' service in the Rubber Research Institute of Malaya include a re-appreciation of the root disease problem in Hevea cultivation; the problems of protection against the danger of the introduction to the East of South American Leaf Blight (Dothidella ulei) and the establishment, under a competent Field Research Officer of a comprehensive series of field experiments on the principal pathological problems encountered in the cultivation of Hevea. Since he joined the 'Pool' he has continued to serve his colleagues in Malaya, both in correspondence and personally in consultations with his old friends from Malaya during their leave periods in U.K. He has also served as a member of the Agricultural Sub-Committee of the London Advisory Committee for Rubber Research (Ceylon and Malaya) from the time of his return to the U.K. in August 1952.

When it was decided to form a Colonial 'Pool' of Plant Pathologists based on C.M.I. Altson was the first member appointed. On him fell the onus of establishing a correct liaison with Colonial departments of agriculture and initiating the researches for which the Pool was established. He first investigated a serious wilt of broad beans, an important food crop in Cyprus, and showed the cause to be the soil inhabiting fungus Fusarium oxysporum f. redolens, and he found varieties showing resistance to the disease. His next assignment was to investigate a

severe root disease of black pepper in Sarawak which was causing very heavy financial losses to growers. Again he was faced with the problem of creating suitable research facilities before he could embark on his project; but before his work could be fully launched he suffered a breakdown in health which necessitated his return to U.K. He soon recuperated and continued as supervisor of the 'Pool' and also was appointed as liaison officer for the C.M.I. to the newly constituted Inter-African Phytosanitary Commission.

His wide experience in tropical agriculture made him a most valuable member of the C.M.I. and his retirement will be felt deeply by all members of the staff.

OBITUARY

At the time of going to press the sad news has been received of the death at an early age of Dr. C.C.V. Batts, well known among plant pathologists for his studies on bunt of wheat and for his work at the N.I.A.B., Cambridge, and as lecturer in plant pathology at the Imperial College of Science and Technology, London.

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PERSONAL NEWS

C.M.I. News

A set of micro-cards of KRYPTOGAMEN-FLORA VON DEUTSCHLAND, OESTERREICH, UND SCHWEIZ. ZWEITE AUFL. BAND 1 (ABT. 1-9, 1884-1910) has been presented to the Library by Messrs. Micro Methods Ltd.

Dr. A.C. Hayward, bacteriologist, paid a visit of several weeks to Mauritius, Réunion, Madagascar, and Natal to investigate the possible occurrence of a new strain of Xanthomonas vasculorum which is seriously affecting hitherto resistant sugarcane varieties growing in Réunion. He returned to C.M.I. in mid-November and has issued a preliminary restricted report.

Dr. R.R. Davies and A. Seymour have resigned and will be leaving C.M.I. in January.

Mr. R.A. Altson has retired from the combined post of "Pool" supervisor and Liaison Officer for the Inter-African Phytosanitary Commission and has been succeeded by Mr. R.W. Rayner, lately of the Department of Agriculture, Kenya.

Mr. V. Shankar, I.C.S., Special Secretary, Ministry of Food & Agriculture, Department of Agriculture, New Delhi, has been appointed C.A.B. Liaison Officer in India in place of Dr. M.S. Randhawa.

Visitors

Among overseas visitors have been: Dr. George H. Coons, U.S.A.; Dr. Eileen E. Fisher, Australia; Dr. D. Ordman, South Africa; Dr. M.S. Randhawa, India; Dr. R.H. Stover, Honduras; Dr. N.B. Kulkarni, M. Kandaswamy, and Dr. T.K. Kandeswamy, India; C.E.T. Mann and Dr. A. Newsam, Malaya.

Dr. Kulkarni worked for two weeks in the Herbarium and Miss Bunce, from Rothamsted, spent several days studying techniques. C.E. Leakey also worked for two weeks before going to I.C.T.A. for a year.

Professor N. Robertson brought a party of 16 students for a day and the biologists from St. Paul's School also paid a visit.

Appointments, Promotions, Retirements, etc.

The Overseas Division of the Colonial Office announce the following: P.C. Chambers, director of agriculture, fisheries, & forestry, Hong Kong; J.E.Y. Hardcastle, principle agricultural research officer, Ministry of Economic Development, Nigeria; P.W.U. Kroll, senior research officer (pyrethrum), Kenya.

Royal Society

Sir Howard Florey has succeeded Sir Cyril Hinshelwood as president of the Royal Society. Among members of Council, Professor D.G. Catcheside, professor of microbiology at Birmingham University, and Professor T.M. Harris, professor of botany at Reading, have been elected.

Sir William Slater has been appointed chairman of the governing body of the Glasshouse Crops Research Institute, Rustington, Sussex.

Dr. J.A. Macdonald, senior lecturer, has been appointed to the Chair of Botany at St. Andrews University recently vacated by Professor J.H. Burnett.

Dr. D.A. Wilkins has been appointed lecturer in Botany at Birmingham University.

(continued on p. 2)

OVERSEAS NEWS

CANADA

MYCOLOGY IN THE CANADA DEPARTMENT OF AGRICULTURE

Mycological investigations in the Canada Department of Agriculture, formerly carried out in the Mycology Unit of the Division of Botany and Plant Pathology, are now centered in the Taxonomy and Mycology Section of the Plant Research Institute, Research Branch, Canada Department of Agriculture, Ottawa. Dr. J.W. Groves is head of the combined section. The section, in addition, is responsible for studies in floristics, plant geography, and taxonomy of flowering plants.

Mycological research is directed principally toward taxonomy with special emphasis on forest fungi. The mycological herbarium now contains approximately 100,000 specimens, not including the Dearness herbarium which is housed in Ottawa at present on loan from the Montreal Botanic Garden.

Dr. D.B.O. Savile is curator of the herbarium and along with Mr. J.A. Parmelee is responsible for research in the rusts, smuts, and parasitic fungi in general. Dr. Mildred E. Nobles, assisted by Dr. C. Madhosingh and Dr. D.D. McLain Jr. are working on the cultural identification and taxonomy of wood-destroying Hymenomycetes. Drs. S.J. Hughes and W.B. Kendrick are concerned with Hyphomycetes on wood and fungi in the forest litter. At present, Dr. Gregoire L. Hennebert of the Catholic University of Louvain is spending a year with Dr. Hughes on a post-doctorate fellowship,

Dr. Ruth Macrae is carrying out studies in the Polyporaceae and Hydnaceae and Dr. Luella K. Weresub is working with the Thelephoraceae. Drs. G.D. Darker, R.A. Shoemaker, and Mrs. Ruth Arnold are responsible for Pyrenomycetes and Sphaeropsidales. Dr. Maria Pantidou is making a cultural study of Boletaceae and Miss Mary E. Elliott is working on Sclerotiniaceae and seed-borne fungi. Mr. D.W. Creelman is responsible for the Canadian Plant Disease Survey. Dr. J.W. Groves is working with Agaricaceae, Boletaceae and Discomycetes as well as directing the overall program of the section.

Canada Department of Agriculture, D.W. Creelman
Ottawa.

Personal Notes

Dr. P.K. Basu who graduated at Presidency College, Calcutta, and received his Ph.D. degree by the University of Toronto has joined the staff of the Plant Research Institute, Canada Department of Agricultura, Ottawa. He worked with Dr. D.L. Bailey, on the Verticillium disease of strawberries.

Dr. W.L. Seaman has also joined the Plant Pathology Section of the Plant Research Institute. His subject is variability in pathogenicity of Plasmodiophora brassicae.

Dr. D.D. McLain Jr. joined the staff of the Taxonomy and Mycology Unit at Ottawa, in September. He will work with Dr. Mildred K. Nobles on the taxonomy of wood-inhabiting basidiomycetes.

Dr. Zenon A. Patrick of Harrow, Ontario, has been granted a year's post-doctoral transfer to the University of California, Berkeley, where he will continue in Dr. W.C. Snyder's laboratory his research on root rots, especially as related to the production and effects of soil toxins arising from degradation of crop residues.

Mr. A. Dinoor of the Department of Plant Pathology of the Faculty of Agriculture, Hebrew University at Rehovot arrived in September to spend ten months at the Canada Agriculture Research Station, Winnipeg, Manitoba.

R.R. Hurst, Administrative Officer-in-Charge at the Research Laboratory, Charlottetown, Prince Edward Island retired on October 31 after 37 years service with the Department. He has been chiefly concerned with diseases of potatoes and

was also one of the original investigators into the role of boron in turnip nutrition.

INDIA

Pigeon-Pea Sterility

The diseased plants produce mosaic symptoms on the leaves and are palish green in colour. They do not produce flowers and remain sterile. Later on they branch profusely and assume an upright habit. The disease is of virus origin and has been successfully transmitted by grafting, and through a species of Eriophyid mite, which has been found to breed on this crop. Previously, negative results were obtained with other species of mites which were collected from the crop for transmission tests and with aphids, jassids, thrips, and white flies.

Shot Hole of Apricot

The disease has not been recorded earlier from India. The causal organism, Xanthomonas pruni, has been isolated from the cankerous spots on leaves as well as on fruits. The disease specimens were collected from Kulu Valley.

Glomerella cingulata on Sugarcane

A disease of sugarcane affecting Co 527 leaves at Samalkot, Andhra Pradesh, with symptoms closely resembling the midrib lesions of Colletotrichum falcatum Went has been observed. The causal organism has been identified as Glomerella cingulata (Stonem.) S. & v.S., which has hitherto not been reported on sugarcane. In addition to the midrib lesions, the fungus produces red streaks in cane stalks which follow the course of vascular bundles, there being little lateral spread of infection. The fungus produces mature perithecia in great abundance on oatmeal agar at 24°C. The conidial stage of this organism agrees with Colletotrichum gloeosporioides Penz.

Nematode Root Injury in Sugarcane

A serious disease of sugarcane was observed in Nellikuppam area, S. Arcot, Madras, during 1958-59. The canes were drying in a peculiar fashion without exhibiting the typical wilt symptoms. The root system of the affected plants showed typical stubby roots accompanied by root rot injury. The analysis of the root and soil samples showed the presence of large populations of a parasitic nematode (Tylenchorhynchus sp.).

Chlorosis of Sorghum

The virus has been transmitted by Perigrinus maidis Ashm. (= P. simplicia Dist.) to Pennisetum purpureum var. thick, Erianthus sp., Canna indica, and to sugarcane but not to maize as previously reported (C.P. NEWS 6: 42, 1960). Single jassids (males as well as females) could transmit the virus, which is carried by the vector in a persistent manner.

Indian Agricultural Research Institute, R.S. Vasudeva
New Delhi.

KENYA

STEM-PITTING IN COFFEE

The controversial condition known as stem-pitting, or bottling, of coffee has been under investigation by Dr. F.M.L. Sheffield of E.A.A.F.R.O. for some time and her findings to date have recently been summarized in the guide to Riuru Research Station prepared for Planters' Day, July 1960, in RECORD OF RESEARCH (E.A.A.F.R.O. 1959).

It is an abnormality in the cellular structure of the xylem, distinguished by pits and furrows under the cambium and sometimes by fluted outlines of the xylem cylinder. There are often resin deposits to be seen when the bark is peeled away. The origin of the condition has been traced to a derangement of the xylem in young seedlings, but the cause is as yet unknown. The fact that 11.9 per cent. of dead

and 11.2 per cent. of living trees examined at Lyamungu, Tanganyika, in 1958 showed stem-pitting does not suggest direct parasitism.

It has been observed that unshaded trees often develop small, thin-walled cells, which make stems more flexible. However, there is no evidence to show that this abnormality is a direct effect of solar radiation or that it is in any way correlated with stem-pitting: the production of abnormal wood is known sometimes to be only temporary.

Top-cleft grafting of scions from affected trees, approach-grafting of rooted cuttings, bench-grafting of roots to healthy seedlings, and grafting of healthy scions to affected trees, failed to prove the presence of an infective agent.

Histological investigations revealed that cell development in coffee trees is easily disturbed by mechanical damage, such as hail and wounds caused by insects, and that stem-pitting is usually confined to parts of the tree up to 1 ft. above ground, which suggests the possibility of injury arising from the soil. Other abnormal developments suggesting virus infection were simultaneously tested by grafting and the work is continuing in conjunction with experiments to determine the role of insects and nematodes, especially in nursery plants.

Most experiments mentioned were conducted in the glasshouses at Muguga and later in fields distant from areas with stem-pitted coffee. At a later stage experimental plants were transferred to the Irrigation Research Station of the Kenya Department of Agriculture.

NAME CHANGES IN HERB. I.M.I. 1960

Agaricus syn. Psalliota

Cochliobolus victoriae R.R. Nelson syn. Helminthosporium victoriae Meehan & Murphy

Corynespora foveolata (Pat.) Hughes syn. Helminthosporium foveolatum Pat.

Corynespora olivacea (Wallr.) M.B. Ellis syn. Sporidesmium olivaceum Wallr.

Corynespora pruni (Berk. & Curt.) M.B. Ellis syn. Helminthosporium pruni Berk. & Curt.

Endophyllum superficiale (Karst. & Roum.) Stev. & Mend. syn. Aecidium superficiale Karst. & Roum.

Epicoccum nigrum Link syn. Epicoccum purpurascens Ehrenb. ex. Wallr.

Geastrum syn. Geaster

Memnoniella subsimplex (Cooke) Deighton syn. Stachybotrys subsimplex Cooke

Pezicula alba Guthrie syn. Gloeosporium album Osterw.

Pezicula malicorticis (Jackson) Nannf. syn. Neofabraea perennans Kienholz
syn. Neofabraea malicorticis (Cordley) Jackson

Phyllachora nervisequens (Lingelsh.) Petrak syn. Trabutia nervisequens (Lingelsh.) Theiss. & Syd.

Pithomyces chartarum (Berk. & Curt.) M.B. Ellis syn. Sporidesmium bakeri Syd.

Pithomyces cupaniae (Syd.) M.B. Ellis syn. Dicoccum cupaniae H. Syd.

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Puccinia levis (Sacc.& Bizz.) Magn. syn. Puccinia tricholaenae (Syd.) Ramakr.

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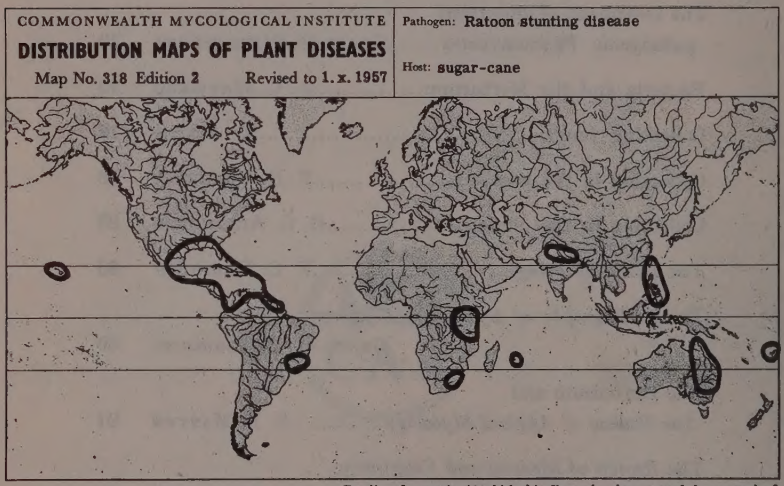
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